REMARKS

Claims 1-12 are pending and stand rejected. Claims 1-12 have been amended. Applicant has also amended the Abstract at the request of the Office. Applicant has also added claims 13-19. No claims have been cancelled. Upon entry of this paper, claims 1-19 will be pending.

I. Specification

A. Abstract of the Disclosure

The Office has indicated that the Abstract should be amended. Applicant has provided a replacement Abstract with the filing of this paper. Entry of the amendment to the Abstract is requested.

B. Title of the Invention

Applicant respectfully disagrees with the Office that the Title is not descriptive. Although Applicant graciously appreciates the Office's alternative Title suggestion, Applicant respectfully submits that the 'reduction of a life gap' is not the only/sole or intended purpose of the invention. Applicant submits that the invention realizes a number of beneficial structure/steps/functions in addition to the 'reduction of the life gap' as pointed out by the Office. As such, Applicant submits that the invention should and does qualify as retaining its current broad title that encompasses the number of benefits that the invention provides. If the Office disagrees with Applicant's position, Applicant invites the Office to contact the Applicant to discuss other alternative Titles prior to amending the Title prior to issuance, should the application be allowed.

II. Claim Objections

Applicant thanks the Office for conducting a thorough review of the claims and pointing out the informalities. Applicant has addressed each of the Office's pointed-out informalities as well as other informalities that were not raised by the Office. Entry of the amendments to the claims is requested.

III. Rejections Under 35 U.S.C. §112, Second Paragraph

A. Claim 9 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant has amended claim 9 and submits that claim 9 is no longer indefinite. Withdrawal of the rejection of claim 9 is requested.

IV. Rejections Under 35 U.S.C. §103(a)

A. Claims 1-3 and 5-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 5,483,268 to Fujimoto ("Fujimoto") and U.S. 6,068,362 to Dunand et al. ("Dunand"). In view of the foregoing remarks, the rejection is respectfully traversed.

Regarding Independent Claims 1 and 11

Applicant submits that claim 1 recites the concept of "*means for preventing one or more of the plurality of ink nozzles from becoming clogged.*" Applicant also submits that claim 11 recites the concept of "*means for improving the life of the print head by preventing one or more of the plurality of ink nozzles from becoming clogged.*" See paragraph [0010] of the publication of the application, as follows:

> **[0010]** Another object of the present invention is to prevent ink nozzles not used from being clogged.

Conversely, Fujimoto *teaches away* from the claimed invention by *permitting operation* of the print head when nozzles *become clogged.* See col. 4, lines 19-30, as follows:

> According to the driving method of the present invention just described, vibration in the printing operation can be reduced, whereby problems such as the disorder of the print and the introduction of bubbles into the ink can be solved, and even if, for example, the nozzle **2** is clogged with the ink, an ink absence (no print) is not conspicuous, which is a concomitant effect. This will be apparent from comparison between FIG. **1** showing the driving method of the present invention and FIG. **6** showing the conventional driving method. For example, if the nozzle G of the head **1** shown in FIG. **6** is clogged, the ink absence occurs all over a vertical line of 4 dots which are printed by the nozzle G, so that the portions of the ink absence are conspicuous. On the other hand, if the nozzle G of the head **1** shown in FIG. 1 is clogged, the print position of the nozzle G is shifted in turn in a lateral direction, so that the ink absence does not occur all over the vertical line as in FIG. **6** and the portions of the ink absence are scattered and so they are not so conspicuous.

(emphasis added). In view of the above, Applicant directs the Office's attention to M.P.E.P. §2141.02 VI as follows:

> **2141.02 Differences Between Prior Art and Claimed Invention [R-5]**

VI. PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (Claims were directed to a process of pro-

Applicant respectfully submits that Dunand does not make up for the deficiencies of Fujimoto's disclosure.

For at least the above reason and other reasons, Applicant submits that claims 1 and 11 are allowable over the art of record. Claims 2-6 depend directly or indirectly from claim 1 and are also allowable. Withdrawal of the rejection to claims 1-6 and 11 is respectfully requested.

Regarding Independent Claims 7, 11 and 12

Applicant submits that claim 7 recites the concept of "*wherein the print target area width of the print medium is less than a maximum print width of the print head.*" Applicant submits that claim 11 also recites "*printing ink on a print target width of the print medium that is less than a maximum width of the print head that is defined by the plurality of ink nozzles.*" Applicant submits that claim 12 also recites "*printing ink on a print target area having a width that is less than a maximum print width of the print head.*" For convenience, Applicant reproduces Figure 5(A) below, which shows the maximum print width (W_1) of the print head that is greater than the print target area width (W_2) of the print medium:

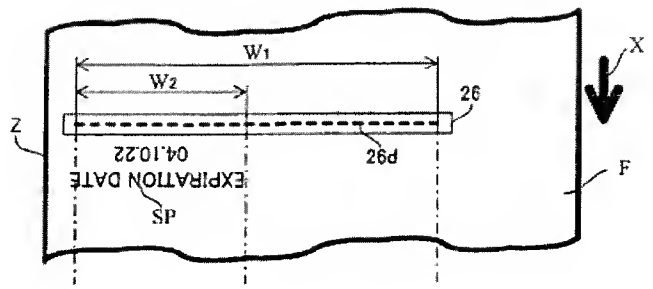

FIG. 5 (A)

Conversely, in the printer of Fujimoto as shown in Figure 1 below, a printer head is moved one dot at a time by four dots of each nozzle of the print head in one print scanning direction in one print line on a print paper.

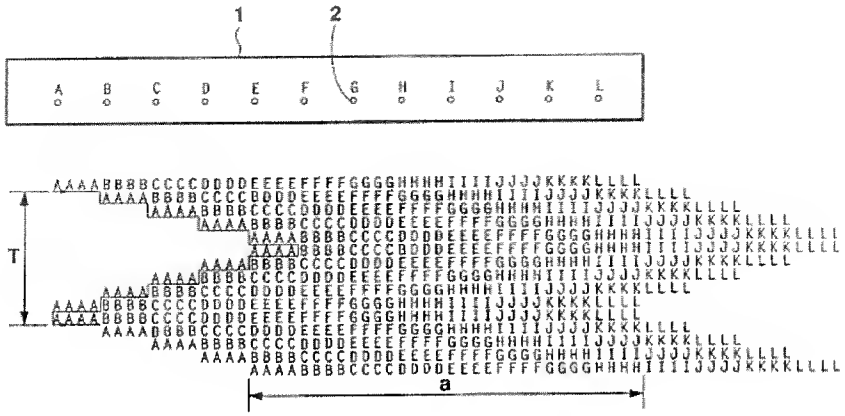

Fig. 1

In other words, Fujimoto is directed to a technique to achieve high density printing by using one nozzle for four times to print a single pattern, whereas, according to the disclosure of Fujimoto, a conventional target area of printing is shown by the range of "AAAA" through "LLLL" in Figure 6 (shown below for convenience), which requires setting the print head back to the initial position each time a printing motion for one line is finished.

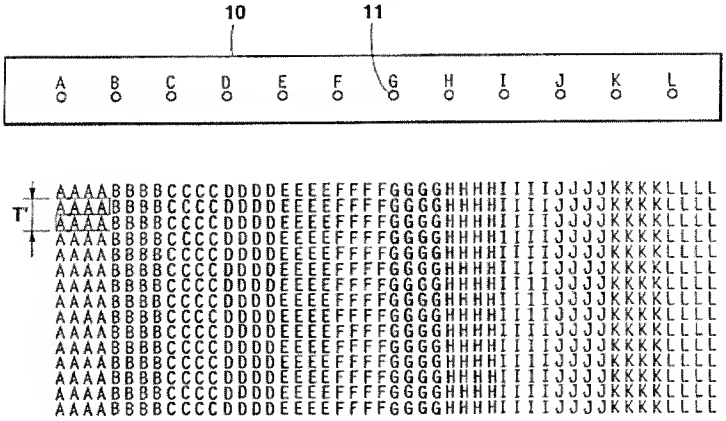

Fig. 6
PRIOR ART

However, the high speed travel of the print head could produce vibration that introduces bubbles into the print head. The introduced bubbles could become the causes of defects in the ink supply. Moreover, the uneven speed of the print head in stroke will decrease the quality of printing. This is also problematic.

Fujimoto's printer has overcome the above-mentioned inconvenience by restricting the target area into the range labeled "a" in order to constrain the motion of the print head per line.

In Fujimoto's printer, the number of nozzles (i.e., twelve nozzles corresponding to nozzles "A" through "L") provides an effective width of the nozzle array (i.e., maximum printing width); however, the width of the target area over which printing is performed is thirty-two dots (i.e. the number of dots corresponding to "AAAA" through "HHHH"). Accordingly, Applicant respectfully submits that the printer of Fujimoto performs printing over a target area that is wider than the substantial width of the nozzles.

Thus, it will be appreciated that the print head of the present invention does not move during its printing of one line of dots; this is unlike the printer of Fujimoto. The present invention prints a row of characters in the direction in which the nozzles are arrayed, by using a print head in which nozzles are arrayed in the direction orthogonal to the carriage of a print media. It is very difficult, by using such a technique, to move the print head for four dots during the carriage of a printing media for one line of dots. The present invention changes the nozzles to be used in order to prevent clogging that would otherwise be caused by an elongated period of non-use of a part of the nozzles, which occurs due to the relative narrowness of the nozzles as compared to the target area. The change of nozzles is achieved by moving the print head at least each time predetermined number of lines including characters that are printed. As such, the object, structure, working and effect of the present invention of such configuration are completely different from those of the printer of Fujimoto.

Applicant respectfully submits that Dunand does not make up for the deficiencies of Fujimoto's disclosure.

For at least the above reason, Applicant submits that claims 7, 11 and 12 are allowable over the art of record. Claims 8-10 depend directly or indirectly from claim 7 and are also allowable. Withdrawal of the rejection to claims 7-12 is respectfully requested.

Regarding Independent Claim 12

Applicant submits that independent claim 12 recites the steps of "*repeating the printing step, ceasing step and moving step until it has been detected that printing ink step has been performed a predetermined number of times, moving said print head in a direction substantially perpendicular to the feeding direction of the print medium, and resuming the printing ink step by using one or more alternative ink nozzles of the plurality of ink nozzles that are different from said one or more predetermined ink nozzles of the plurality of ink nozzles after the print head was moved in the direction substantially perpendicular to the feeding direction of the print medium.*"

Applicant respectfully submits that the art of record does not teach, suggest or disclose claim 12 as amended. Applicant submits that claim 12 is allowable over the art of record and that the rejection should be withdrawn.

B. Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Fujimoto in view of Dunand and in further view of U.S. 6,547,355 to Shimada et al. ("Shimada"). In view of the foregoing remarks, the rejection is respectfully traversed.

Applicant respectfully submits that neither of Dunand and Shimada make up for the deficiencies of Fujimoto's disclosure. Claim 4 depends from non-obvious independent claim 1, and, therefore, Applicant submits that claim 4 is also allowable. Withdrawal of the rejection to claim 4 is respectfully requested.

V. New Claims

Applicant has added new claims 13-19. Claim 13 is in independent form. Claims 14-19 depend directly or indirectly from independent claim 13.

Regarding dependent claims 15 and 16, Applicant submits that support may be found at paragraphs [0037] and [0125] of the publication of the application as follows:

[0037] According to the present invention, in a line inkjet printer, the ink nozzles of the print head can be used more equally, therefore ejection troubles of the ink nozzles can be reduced. Further, the life of the print head as a whole can be improved.

[0125] When the shift amount SA is set large, it is possible to move many ink nozzles along the moving direction of the print head **26**, per movement of the print head **26**. This makes it possible to use more ink nozzles along with one movement of the print head **26**, and to use the multiple ink nozzles more equally.

Regarding dependent claim 17, Applicant submits that support may be found at paragraphs [0007], [0009] and [0037] of the publication of the application as follows:

[0007] The technique disclosed in the Patent Literature 1 can perform printing at a high density by using ink nozzles of low-density arrangement. However, this technique cannot solve the problem of a gap in life arising between ink nozzles used frequently and ink nozzles hardly used, and the problem of the life of the print head as a whole being reduced due to the gap in life arising.

[0009] An object of the present invention is to reduce the problem of life gap between ink nozzles used and ink nozzles not used and to improve the life of the print head as a whole.

Regarding dependent claim 18, Applicant submits that support may be found at paragraph [0037] of the publication of the application. Regarding dependent claim 19, Applicant submits that support may be found at paragraphs [0007] and [0010] of the publication of the application.

In view of the above, Applicant respectfully submits that claims 13-19 are allowable over the art of record. Allowance of claims 13-19 is hereby requested.

Conclusion

If any fee is due with the filing of this paper, please charge our Deposit Account No. 50-3145, under Order No. 215384-106296 from which the undersigned is authorized to draw.

Dated: June 29, 2009

Respectfully submitted,

By _____
Joseph V. Coppola, Sr.
Registration No.: 33,373
HONIGMAN MILLER SCHWARTZ AND COHN LLP
38500 Woodward Avenue
Suite 100
Bloomfield Hills, Michigan 48304-5048
(248) 566-8500
Attorney for Applicant

OAKLAND.1655500.2